



The Reverchon Naturalist

Recognizing the work of French botanist Julien Reverchon, who began collecting throughout the North-Central Texas area in 1876, and all the botanists/naturalists who have followed ...

What Is An Elbow Bush?

*Story by Martha Mullens
Richland Hills, Texas*

You might know it as Spring Herald, Texas Forsythia, Spring Goldenglow, Tanglewood, Devil's Elbow, Cruzilla, Stretch Berry, Downy Forestiera, or even Chaparral. By any other name it is still *Forestiera pubescens*, and a member of the Olive Family (Oleaceae). It is one of the first bushes or trees to bloom in the spring, hence, the name Spring Herald. In fact, its delicate yellow to greenish flowers appear in the axils of last year's leaves in February when the other plants are still dormant. The plant's shape and yellow flowers do resemble forsythia, thus the name Texas forsythia.



This photograph shows the Elbow Bush in March with new fruit and leaves. (Photo Credit: Troy Mullens)

An unusual characteristic is that the male and female flowers are on different plants (dioecious) and have no petals. Female flowers are more yellowish, each with one 2-lobed stigma, while male flowers form a cluster of green, each flower containing 2-5 stamens, and surrounded by hairy (pubescent) clusters of bracts.

These blossoms attract bees and butterflies, and are an important food source for those insects that emerge from their winter sleep early. The ½ to 2-inch long elliptic or oval leaves are deciduous, simple, opposite, with finely toothed margin, and smooth or hairy surfaces. The fleshy, 3/8-inch long, blue-black, one-seeded (drupe) fruits appear only on the female and furnish an important food source for birds and small mammals from June to October.

The twigs are greenish to yellowish and pubescent when young changing to smooth (glabrous) and gray when older. The stems or branches are covered with white dots (lenticels) for exchange of gases. Spotting these prominent dots or bumps allows one a positive identification of this bush in the winter when there are no blossoms or leaves present. The buds furnish food for caterpillars, such as Henry's elfin, *Callophrys henrici*, which uses it as a larval host plant.

Elbow bush grows in North-Central Texas southward to the Edwards Plateau, and westward to the Trans Pecos in open fields or prairies, along streams, and in brush or thickets. The characteristic growth pattern of drooping branches that layer and form a thicket is why it is called Elbow Bush, Devil's Elbow, Tanglewood, or Chaparral. It can grow to a height and width of 15 feet with a diameter up to 5 inches. Because of its growth pattern and size, it can be classified as a shrub or tree, but it is usually a straggling, irregularly-shaped bush sometimes more resembling a twisted vine.

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See You Down the Road

By Ricky Linex
NRCS Wildlife Biologist
Weatherford, Texas

The Worst of Times and The Best of Times

That old line from Charles Dickens about “the worst of times and the best of times” applies to forbs, grasses and woody plants beginning growth this spring. Many plants suffered at the hands of nature and man during the hot and dry 2011 growing season, and only now can we really determine the total extent of damage. Droughts have occurred many times in previous decades and across the centuries. Native plants cope with extremely dry periods by slowing down growth to a maintenance rate or by just going dormant. Last fall, the leaves of cedar elms began to brown out prior to frost leaving the trees looking sickly compared to other trees still holding green leaves. This spring those elms are back with new growth looking no worse for the wear. However, it has been reported that approximately 10 percent of all trees in Texas were lost due to the extended 2011 drought and heat.

Cedar elms are browsed upon by deer and livestock, but in relation to the overall size of the trees (how much of the browse is actually within reach of animals) the amount of browsing is minimal. Compare the relatively light browsing of cedar elm to the amount of utilization grasses and forbs receive. Since grasses and forbs are totally available for use by grazing animals the amount of utilization is often very heavy. Overutilization of the forage weakens the plants, and if this overutilization occurs frequently enough the plant becomes weak and subsequently dies. Overuse in 2011, coupled with high temperatures all summer stressed those plants within reach of grazing and browsing animals.

2012 should be a great year to compensate for the harshness of 2011 by resting pastures and allowing this blessed moisture received to date to begin the healing process. Seedlings of grasses, forbs and young woody plants need protection from grazing to allow these young plants to fully develop and fill in the bare spaces across the landscape. Establish some photo points across your property to monitor the improvement over time. Get out and walk your property to see what has happened to the land. Hopefully 2012 will continue the restoration of our native plants, because it has truly been the best of times for this spring.

Gestalt of a River

Oh, melancholy blue
Your ripples cast shadows
O'er impermanent sands
Revealing patterns
in well-worn paths.

Oh, royal violet
Intermediary of earth and sky
Gentle ruler
Of that transcendent place
Between past and future.

Oh, leaf
Oh, earth
Oh, ground beneath
All that which is reflected
Above
All that which is contained
Below
All that which
moves within.

*Poem by Jessica
Manley and photo by
Lissa Martinez,
Alamo Area Texas
Master Naturalists*



What Difference Does It Make Which One I Choose?

Story by Brandon Carr, NRCS Soil Conservationist

James E. "Bud" Plant Materials Center

Knox City, Texas

Pick up any seed inventory or planting rate table and chances are you will find multiple release names for the same species. While they may have the same common name and scientific name, there can be significant differences in soil types, drought and temperature tolerance, and rainfall requirements needed for maximum productivity. When considering the best choice, it is important to determine which release will work for your individual operation and resource concerns. It is also important to determine the exact species you are looking for. Bundleflower can include several different species and releases, so proper identification is crucial.

You may think it is all bundleflower; it should all be the same. While it may all be bundleflower, *Desmanthus*, differences will still exist. Illinois bundleflower, *Desmanthus illinoensis*, is just one example of this case. Two release names are 'Sabine', released from the James E. "Bud" Smith PMC in Knox City, Texas, and Reno germplasm, released from the Manhattan Plant Materials Center in Manhattan, Kansas. While they may be grown in different areas, it is important to choose the release that has been adapted to your area. Releases from the Plant Materials Program are selected, tested, and produced for use within each individual Plant Materials Center's service area.

The goal is to determine the highest quality plant to address different resource concerns within a particular area. Although the potential range of adaptation may be greater, performance outside of this area has not been adequately tested. You may not be able to visually distinguish between the two with the naked eye, but over several years you may notice lower forage or seed production, faster mortality, or just an overall poor plant health if the wrong decision is made.

Selecting the proper species is another consideration when deciding which bundleflower to use. Plant height, seed size and production, plant type and maturity can all differ between species. The following chart gives several examples of bundleflower species or releases and some adaptability differences between them. Again, a good understanding of different species will help in selecting the proper plant for your unique operation and resource concerns. (Photos courtesy of Ricky Linex, USDA-NRCS)



Illinois bundleflower
(*Desmanthus illinoensis*)



With a release name of Sabine, left, and common name of Illinois bundleflower, the seed, right, takes on a total look all its own.

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Blessed Milk Thistle

Story by *Ricky Linex, USDA-NRCS*
Weatherford, Texas

Have you ever noticed that plant names can be very misleading? While blessed milk thistle, *Silybum marianum*, also known as Our-Lady's-thistle and Holy-thistle, has some medicinal values and is appreciated in Europe, it is an aggressive and dominating invader in Texas. This introduced annual or biennial begins growth in late-winter growing from a small rosette into a sprawling mass of prickly leaves that can approach six feet in height and width by mid-summer. A quick way to distinguish this thistle from others is to look for the white mottled stripes across the green leaves, much like the stripes of a zebra. The leaves may reach lengths of up to 30 inches and 12-15 inches in width. The spiny flower heads are 1 to 3 inches in diameter with purplish disk flowers.

Warm temperatures and above average rainfall this winter and spring has caused a large scale outbreak of this thistle across north-central Texas. The end result will likely be extremely large patches of this introduced forb appearing in new areas. According to the *Illustrated Flora of North Central Texas*, blessed milk thistle was first collected in Texas in Sutton County in 1938, and was first found in north-central Texas in Navarro County in 1949. This plant was confirmed in Milam, Williamson, Bosque and Comanche counties in the years 2008-2010, as well as this spring in Hill, Johnson, Palo Pinto and Clay counties. Small grain fields are common locations for finding blessed milk thistle, as well as in and around old livestock pens and equipment or storage yards. Blessed milk thistle is not grazed upon by any livestock or browsing animals and eventually results in reduced crop yields and grass growth. Carelessly walking into this thistle will quickly result in stinging from the numerous prickly leaves.

By late-March of this year many locations have been observed where blessed milk thistle has already reached 12 to 42 inches in height. This plant normally flowers in May-June, so unchecked growth this year will result in hundreds of thousands of seeds being produced. Now is the time to scout your property and plan your attack to prevent these plants from maturing. Hoeing will kill the plant but by the time this thistle is noticed you may have scattered plants covering an acre or more. Chemical control can be by backpack sprayer, ATV or even aerial spraying depending upon the density of plants and area covered.

Perhaps this is just the first wave of invasive plants to be seen on Texas lands that suffered from the hot and dry 2011 growing season. Many plants have seeds lying dormant in the soil waiting for a chance to germinate and grow; 2012 may prove to be their year. (*Photos Courtesy of Ricky Linex, USDA-NRCS*).



Blessed Milk Thistle
(*Silybum marianum*)



The mottled white stripes on the leaves, center, identifies the Blessed Milk Thistle, as well as the purplish flower, left, in north-central Texas.

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This plant can form an interesting background in a naturalistic landscape because of its light green leaves and attractive flowers which are among the first to appear in the spring. It is heat tolerant and sun loving although it will grow in partial shade.

It grows best in rich, moist soil, but will tolerate many soil types, as long as they are well-drained. Careful pruning provides a dense shrub.

Martha and Troy Mullens are members of the Cross Timbers Chapter of Master Naturalists, Native Plant Society, and National Audubon Society.



An Elbow Bush (*Forestiera pubescens*) bloom in February, which also is showing prominent lenticels. (Photo Credit: Troy Mullens)

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Release	Common Name	Scientific Name	Adaptation	Rainfall Requirements	Soil
'Sabine'	Illinois Bundleflower	<i>Desmanthus illinoensis</i>	Throughout Texas except for the Rio Grande Plains and east Texas Timberlands	at least 20"/yr	Adapted to most soil types, with exception to coarse sands and dense clays
Reno Germplasm	Illinois Bundleflower	<i>Desmanthus illinoensis</i>	Throughout Oklahoma, Kansas, and Nebraska	at least 16"/yr	Adapted to most soil types, with exception to coarse sands and dense clays
Hondo Germplasm	Velvet Bundleflower	<i>Desmanthus velutinus</i>	Throughout central, south, and west Texas, as well as southern Oklahoma		Prefers calcareous and limestone soils, but not heavily wooded areas or areas that remain wet for extended periods of time
'BeeWild'	Two-Horn Bundleflower	<i>Desmanthus bicornutus</i>	Throughout Mexico, Arizona, and south and central Texas	at least 12"/yr	Prefers heavy to medium texture soils that are neutral to very alkaline



The flower of the Velvet bundleflower (*Desmanthus velutinus*), left, is far different from the leaves and fruit, center, and seeds when released, right.
(Photos courtesy of USDA Plants database)



Bristles, Prickles, Spines and Thorns - What's the Point?

By Ricky Linex, USDA-NRCS

Weatherford, Texas

There are many sharp points on plants and it is sometimes confusing to know what to call that projection. Pulling these sharp definitions from the *Illustrated Flora of North Central Texas* should clear up this prickly situation. Examples of armed plants are also listed.

HAIR – An epidermal appendage that is usually slender, sometimes branched, not stiff enough to be called a spine, not flattened as a scale; often used synonymously with trichome*. (Bush sunflower)

BRISTLE – Stiff, strong but slender hair or trichome*. (Bur-cucumber)

PRICKLE – A slender, sharp, epidermal outgrowth without vasculature e.g. the armature of roses. (Catclaw sensitive-briar)

SPINE – A sharp-pointed structure, usually vascularized and thus stout or woody, generally modified from part or all of a leaf or stipule. A spine is sometimes distinguished from a thorn, which is a modified branch. (Sandbur, which has spines armed with downward pointing bristles, and Honey mesquite)

BRANCHLET – The ultimate division of a branch. (Bumelia has spine-pointed branchlets)

THORN – A sharp-pointed, stiff, woody, structure derived from a modified branch. (Honey-locust)

**Trichome* – Any hair, hair-like projection, or bristle from the epidermal surface.

Becoming a Skilled Conservationist - Be a Keen Observer and Write it Down

Story by Steve Nelle

Retired NRCS Wildlife Biologist

San Angelo, Texas

After a 35-year career with the Soil Conservation Service and NRCS, I have a number of regrets; things I wish I had done, or done differently. One of the main regrets I have is failing to write down some of the thousands of interesting ecological observations made during the course of each season. If I had it to do over again, I'd keep a natural resource journal in my truck and carry it with me in the field. This would not have to be an extensive or exhaustive recording of every detail, but just a simple record of what you see and some notes on the significance of it.

We all think that we will remember our observations; but for most of us, memory alone is a poor and insufficient record of what happened. Many of the greatest ecologists and conservationists and land stewards have kept a chronicle of their daily or weekly observations. While it may seem insignificant at the time, I think we would all be surprised how meaningful recorded observations are 5, 10 or 20 years later.

If you work for the NRCS or another organization, remember that your employer is not paying you to write for hours each week; but a few entries each day or each week will take only a few moments and is well worth the time.

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Native Seed Collection Outlook for 2012

Story by Mia McCraw, Research Associate. TAMU
Stephenville, Texas

We have a much more positive outlook for native seed collection in 2012 than 2011. One of the *Texas Native Seeds* (TNS) project's goals is to improve the amount of source material available for regionally adapted native seed sources. This goal cannot be accomplished without new seed collections. With the mild winter and recent rains, our focus this spring is on two grass species of great interest: Texas wintergrass (*Nassella leucotricha*) and little barley (*Hordeum pusillum*). Both of these cool season species have the potential to become important additions in range improvement and/or restoration plantings. Help with the collection of these species would be immensely valuable for the TNS project.

Texas wintergrass, also known as speargrass, is a fair winter forage species that becomes green in the fall, and maintains growth till late-spring. The inflorescence is composed of a loose assembly of seeds that have twisted dark green awns 2-4 inches in length. At maturity in late-spring, the awns turn tan to dark brown and the seed shatters soon after. Wildlife often uses this bunchgrass for cover and the seeds are eaten by many species of birds. Texas wintergrass is an early to mid successional species that reproduces primarily by seed, found on a variety of soils, and would be a good candidate for cool-season road side plantings.

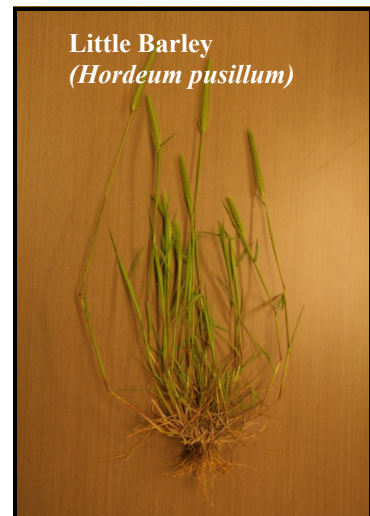
Little barley is a winter annual that is often found on poor soils, overgrazed pastures, and degraded sites. The inflorescence is a flattened bright green spike similar to related cereal grain crops, and quickly matures in late-spring when it turns straw-colored. Little barley is an early successional species that may have great potential as a restoration species due to its growth form, and adaptability to poor and degraded soils on many reclamation sites.

We are seeking collections of these species consisting of 400-1000 seeds from notable populations. These collections should be placed in a paper lunch bag to fully dry. Pertinent information including collection date, location, soil type, and if possible GPS coordinates should all be written on the bag. Texas wintergrass quickly drops seed at maturity, so timing the collection of this species can be difficult for the large area covered by the Central Texas portion of TNS. Little barley retains its seed long after maturity providing a larger window for collection.

Currently there are few commercial sources for these species, and very little known about their propagation or use in restoration plantings. With the help of the USDA-Natural Resources Conservation Service's Plant Materials Centers, Texas AgriLife Research & Extension Service, and several universities, TNS hopes to improve the knowledge for these and many more native plant species. Ultimately our goal is to provide more source material for the commercial seed market to make available to consumers. If you would like to help with the TNS project by contributing to our seed collections, or have more questions, please feel free to contact Mia McCraw at mia.mccraw@tamu.edu or (512) 576-6923. Also, please visit our new web page for more information about our project: <http://ckwri.tamuk.edu/research-programs/texas-native-seeds/> (Photo Credit: Ricky Linex, USDA-NRCS)



Texas wintergrass, also known as speargrass, above photo, is a fair winter forage species that becomes green in the fall, and maintains growth until late-spring.



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How many of you can answer the following questions from memory without guessing?

What is the first desirable warm season grass to green up in spring?

When does silver bluestem cease to be palatable to cattle?

How many new joints of buffalograss stolon are produced each week during the peak of the growing season?

Which grasses are most preferred by cattle during each period of the year? Which are least preferred?

What is the first wildflower to bloom in spring?

What is the first shrub to sprout new leaves in spring? Which is the first to flower?

When do new seedlings of Engelmann daisy normally establish?

What seeds do you frequently find intact within sheep, goat, deer and rabbit pellets?

How far out do root sprouts of western soapberry commonly go?

When does wolfberry make mature fruit?

When do the robins move through and what are they eating?

How many times does kidneywood bloom each year and under what conditions?

How many new pads of pricklypear are produced from each old pad and how does this vary from year to year?

How long after pollination does it take for juniper to produce mature fruit?

How many seed crops are produced each year from Texas cup grass and how does this vary from year to year?

Which shrubs are most often killed by intense summer fire and which shrubs are seldom killed?

Which shrubs are most often killed by the application of picloram or picloram mixtures?

The list of questions could go on for pages, but the main point is that most of us are not as observant as we need to be and we do not record our observations for future reference and benefit.

Many of you have the incredible privilege of being invited on to hundreds if not thousands of different farms, ranches and rural properties. You have the opportunity to see things that few Texans see, and the opportunity to become some of the very best practical ecologists anywhere.

Take the time to get out of the truck and look. Leave your cell phone, smart phone, I-Pod, GPS and other gadgets in the truck. Take your journal and perhaps your camera and go out specifically to discover and record what is happening. Get down on your hands and knees and look closely if needed.

Consider this quote from the great grassland ecologist, John Ernst Weaver: *“Nature is an open book for those who care to read. Each grass covered hillside is a page on which is written the history of the past, the condition of the present, and predictions of the future.”*

Learning to observe; learning to read the land; and then writing it down season by season will be one of the greatest contributions you can make as a conservationist and natural resource worker. You will be glad you did and countless others will benefit.

NRCS Joins Conservation Professionals at the 48th Annual Texas Chapter of the Wildlife Society Meeting

Story by Randy Henry, USDA-NRCS

Weatherford, Texas

Going back to 1965, the Texas Chapter of the Wildlife Society (TCTWS) has promoted excellence in wildlife stewardship through science and education. In 2012, the USDA- Natural Resources Conservation Service (NRCS) joined other agencies and wildlife conservation professionals at their 48th annual meeting held in Fort Worth, Texas.

NRCS provided a plant identification contest for attending students and professionals adjoining a student only version of the contest earlier on the agenda. Around 570 students and professionals attended the annual meeting, and many took the NRCS plant identification test that was monitored by Kent Mills, nutritionist at Hi-Pro Foods in Snyder, Texas, and Ricky Linex, NRCS wildlife biologist in Weatherford.

“It was good to see the large number of students that took the student plant ID test, and also participated in the NRCS contest exercising their knowledge of plants against conservation and wildlife professionals,” said Linex.

Other NRCS personnel at the meeting and working the Texas Grazing Lands Conservation Initiative (GLCI) and Society of Range Management booth included Kevin Derzapf, GLCI grazing lands specialist in Weatherford, and Matt Machacek, NRCS rangeland management specialist in Corsicana.

At the annual meeting this year, field biologists, students, researchers, educators, private landowners, and others from around Texas and other states, including Arizona and New Mexico enjoyed 90 presentations spread over 10 sessions.

Besides the NRCS plant identification competition, there were student photo and poster contests, a Texas quiz bowl, Texas Feral Swine Roundtable, Southwest Section Roundtable, and a silent auction benefitting the TCTWS. The society started in 1937 and is an international, non-profit scientific and educational organization serving wildlife conservation and resource management professionals in many states and countries.

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